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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,658	10/18/2004	Sherman S. Lin	0837RF-H544-US	6248

38441 7590 01/16/2007  
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BURLESON, TX 76028

EXAMINER
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THOMPSON, KENNETH L

ART UNIT	PAPER NUMBER
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3672

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/511,658

Applicant(s)

LIN ET AL.

Examiner

Kenneth Thompson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-13 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 3 and 14-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>24 Aug 06</u>   | 6) <input type="checkbox"/> Other: ____                           |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-13 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al., US 6,336,986.

Regarding claim 1, Lee et al. discloses in figures 1-11 a drive shaft having an elongated composite material portion (110) having opposing ends; and at least one end adapter (114,115; 112) disposed at one end of the composite material portion, the end adapter being captured into the composite material portion during the process of manufacturing.

As to claim 2, Lee et al. discloses the end adapter is metallic (col. 4, lines 36-40).

As to claim 4, Lee et al. discloses the composite material portion is formed from a braided fiber and resin transfer molded composite (col. 1, lines 64-67).

As to claim 5, Lee et al. discloses the braided fiber is a two dimensional braided fiber.

As to claim 6, Lee et al. discloses the braided fiber is a three dimensional braided fiber.

As to claim 7, Lee et al. discloses the composite material portion is formed from a filament wound composite (col. 1, lines 64-67).

As to claim 8, Lee et al. discloses a component interface portion adapted for coupling to a driving or driven component; and an adapter-tube interface portion (121); wherein the adapter-tube interface portion is adapted to be captured into the composite material portion during the process of manufacturing.

As to claim 9, Lee et al. discloses means (121,116) for transferring torque from the end adapter to the composite material portion and vice versa.

As to claim 10, Lee et al. discloses a layer of adhesive disposed between the end adapter and the composite material portion (col. 4, lines 49-54).

As to claim 11, Lee et al. discloses a neck portion (between 121 and 114) disposed between the component interface portion and the adapter-tube interface portion (121), the neck portion having a reduced cross-sectional area.

As to claim 12, Lee et al. discloses at least one recessed circumferential groove (fig 11; between 111 and 125) around the adapter-tube interface portion.

As to claim 13, Lee et al. discloses at least one outwardly protruding lug (spline of 121) disposed at the adapter-tube interface portion.

Regarding claim 20, Lee et al. discloses a method of manufacturing a drive shaft comprising the steps of: providing a mandrel (111); providing at least one end adapter (114,115); placing the end adapter over the mandrel; applying polymer or plastic fibers (112,113) over the mandrel and end adapter to form a preform; providing

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a mold (130) configured to fit over the preform; enclosing the preform with the mold; heating the assembly of mold and preform; vacuuming the mold; injecting resin into the mold; curing the resin to form the drive shaft; removing the mold; and removing the mandrel.

As to claim 21, Lee et al. discloses placing a layer of adhesive on the adapter-tube interface portion of the end adapter before the step of applying the polymer or plastic fibers over the mandrel and end adapter to form a perform (col. 6, lines 12-17).

Regarding claim 22, Lee et al. discloses a method of manufacturing a drive shaft comprising the steps of: providing a mandrel (111); providing at least one end adapter (114,115); placing the end adapter over the mandrel; applying pre-impregnated fibers (112) by filament winding or filament placement over the mandrel and end adapter; providing vacuum bags; enclosing the filament wound drive shaft with the vacuum bags (130); vacuuming the bags; curing the resin; removing the vacuum bags; and removing the mandrel.

### ***Allowable Subject Matter***

Claims 3 and 14-19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

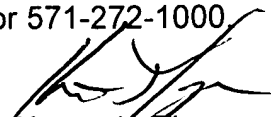
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Thompson whose telephone number is 571 272-7037. The examiner can normally be reached on 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

1/4/07

  
Kenneth Thompson  
Primary Examiner  
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